SOUND ENVIRONMENTAL STRATEGIES
www.soundenvironmental.com

November 15, 2005

David Church
Seattle Pacific University
2 West Dravus Street
Seattle, Washington 98119

SUBJECT: SUPPLEMENTAL REMEDIAL ACTION SUMMARY
Fort Casey
1276 Engle Road, Coupeville, Washington

Dear Mr. Church,

Sound Environmental Strategies Corporation (SES) completed soil screening verification sampling and supplemental remedial activities at the Fort Casey property located at 1276 Engle Road in Coupeville, Washington. These activities were performed in response to the identification of three areas adjacent to previously-excavated locations where total lead above the MTCA Method A cleanup level for unrestricted land use (cleanup level) remained. This summary describes the field activities conducted and presents data in the attached figures, tables, and appendices. This letter summary is intended to supplement the SES *Independent Cleanup Action Report* (SES, October 11, 2005).

BACKGROUND

Upon completion of the independent cleanup action performed by Seattle Pacific University (SPU) in September and October of 2005 SES submitted the Independent Cleanup Action Report (October 11, 2005) and a no further action determination letter was issued by the Washington State Department of Ecology (Ecology).

The Environmental Protection Agency (EPA) used Herrera Environmental Consultants (HEC) to conduct an independent assessment of the firing-range on September 20, 2005. Darrell Jacobsen from SPU was on site during the HEC assessment activities. HEC performed lead field screening using a portable Niton Dual Detector XL-309 Lead Spectrum Analyzer (XRF) device. Seven of the 11 screened locations had lead levels above 250 parts per million (ppm). HEC collected two soil samples from two of the XRF-screened locations to verify the presence of total lead above the cleanup levels. Soil sample CC03SS, collected from the south edge of the berm excavation, contained a total lead concentration of 16,400 ppm and had an XRF screening result of 10,726 ppm (XRF reading 5) (Table 1, Figure 3). Soil sample CC02SS, collected from the northwest corner of the former armory storage area excavation, contained a total lead concentration of 664 ppm and had an XRF screening result of 1,322 ppm (XRF reading 8) (Table 1, Figure 4).

SOIL VERIFICITION SAMPLING

SES returned to the site to verify the HEC field screening results on November 4, 2005 with Darrell Jacobsen. SES collected soil samples at the eleven HEC XRF screening locations as confirmed by Darrell Jacobsen. SES findings from this event are summarized below. Data to support the findings can be located in Table 1, Figures 3, Figure 4, and the appendices attached to this summary:

- Residual lead-contaminated soil remained on the south edge of the berm. SES soil samples SES-4 and SES-4a collected at 3 feet bgs had total lead concentrations of 950 mg/kg and 590 mg/kg, respectively.

- An approximately 2-inch, visually distinctive black charcoal layer existed on the surface of the central portion of the north side of the former armory storage area. SES soil sample SES-8 collected from the charcoal layer had a total lead concentration of 4,100 mg/kg. SES soil sample SES-8a collected 6-inches below the ground surface (bgs) beneath the black charcoal layer contained a total lead concentration of 91 mg/kg, well below the cleanup level of 250 mg/kg. The high levels of lead in the charcoal layer are likely from lead-based painted components from the former armory building.

- Residual lead-contaminated soil remained on the southwest edge of the elevated jogging trail. SES soil samples SES-2 and SES-2a had total lead concentrations of 440 mg/kg and 390 mg/kg, respectively.

- HEC XRF Reading 6 (2,226 ppm) was collected on the northwest end of the berm in an area that was subsequently over-excavated by SES on September 22, 2005, and removed from the site as lead waste. SES soil samples SES-6 and SES-6a collected at 3 feet bgs and 4 feet bgs, respectively, had total lead concentrations below the cleanup level.

SUBSEQUENT SOIL EXCAVATION

SES returned to the site on November 10 and 11, 2005 to excavate the remaining lead contaminated soil that had been identified by HEC and verified by SES. SES used an XRF to field verify the effective removal of lead contaminated soil. Soils with XRF screening results above 200 ppm were subsequently over excavated and placed into 55-gallon drums. The drums were properly labeled and are scheduled to be transported to Waste Management's Subtitle D landfill facility in Arlington, Oregon as dangerous waste, for pre-treatment prior to landfill disposal. Soil confirmation samples were collected from the excavation areas (Table 1, Figures 5 and 6). SES findings from this event are summarized below:

- Location of HEC soil sample CC03SS was verified with SES soil sample SES-11 collected at 2.0 feet bgs. Soil sample SES-11 collected at 2.0 feet bgs had a total lead concentration of 5,900 mg/kg and an XRF reading of 8,060 ppm.

- A 3 to 3.5 foot layer of soil was removed from the south end of the berm to the edge of the bluff. SES confirmation soil samples SES-11A at 3.5 feet bgs and SES-13 at 3.5 feet bgs have total lead concentrations below the cleanup level and confirm vertical and lateral removal of lead contaminated soil in the vicinity of HEC soil sample CC03SS. No soil is present to the south of the berm. The south end of the berm is the southwestern edge of

the bluff. SES also collected soil samples at 4.0 feet and 4.5 feet (SES-11B and SES-11C respectively) from beneath HEC soil sample location CC03SS as requested by Ecology to verify the effective removal of lead contaminated soil at depth. SES-11B and SES-11C had total lead concentrations below the cleanup level.

- Residual lead contaminated soil was removed from the southeast end of the berm to 3.5 feet bgs. SES confirmation soil samples SES-9 collected at 3.0 feet bgs and SES-10 and SES-22 collected at 3.5 feet bgs have total lead concentrations below the cleanup level and confirm vertical and lateral removal of lead contaminated soil in the vicinity of SES soil samples SES-4 and SES-4A.

- Residual lead contaminated soil was removed from the southwest edge of the elevated jogging trail. SES confirmation soil samples SES-14, SES-15, and SES-23A collected at 0.5 feet bgs have total lead concentrations below the cleanup level and confirm vertical and lateral removal of lead contaminated soil in the vicinity of SES soil samples SES-2 and SES-2a. No soil is present directly west of jogging trail. The west edge of the jogging trail is the east edge of the below grade concrete wall. SES also collected soil samples at 1.5 feet and 2 feet (SES-23A and SES-23B, respectively) from beneath SES soil sample locations SES-2 and SES-2A as requested by Ecology to verify the effective removal of lead contaminated soil at depth. SES-23A and SES-23B had total lead concentrations below the cleanup level.

- The approximately two-inch visually distinctive black charcoal layer on the surface of the former armory storage area was removed from the northwest corner of the former building outline to a depth of 1 foot bgs. The final extent of the excavation was approximately 11 feet by 11 feet (Figure 6). SES confirmation soil samples SES-8a collected at 6 inches bgs, and SES-21, SES-24, SES-25, SES-26, SES-27, and SES-28 collected from 1 foot bgs have total lead concentrations below the cleanup level and confirm vertical and lateral removal of lead contaminated soil from the former armory storage area. SES also collected soil samples at 1.0 feet bgs and 2.0 feet bgs (SES-16A and SES-16B respectively) from beneath SES soil sample location SES-8 and HEC soil sample location CC02SS as requested by Ecology to verify the effective removal of lead contaminated soil at depth. SES-16A and SES-16B had total lead concentrations below the cleanup level. SES also performed XRF soil screening and verification soil sampling around the perimeter of the former armory storage area. Soil samples SES-17, SES-18, SES-19, and SES-20 were collected from the surface of the north, west, east, and south sides of the former armory building outline respectively and contained total lead concentrations below the cleanup level.

- No groundwater was encountered in any of the areas excavated. The subsequent excavations performed on the berm and jogging trail were both conducted on elevated portions of these two separate above ground structures. Soils containing total lead levels above the cleanup level in the former armory storage area were limited to a six-inch surface layer. Soil samples collected at depth in the former armory storage area, berm area, and the jogging trail area suggest lead contaminated soil is not in contact with groundwater.

- Thirty-three 55-gallon drums of lead contaminated waste were generated from the site.

CONCLUSION

SES field verification sampling and subsequent excavation activities completed at the site were successful in identifying and removing remaining lead contaminated soil from the firing-range. Soil associated with the XRF soil screening and soil sample locations identified by HEC and the EPA as containing lead concentrations above the MTCA Method A Cleanup Level For Unrestricted Land Use have been removed from the site.

Respectfully,

Sound Environmental Strategies Corporation

Chris M. Carter
Environmental Project Manager

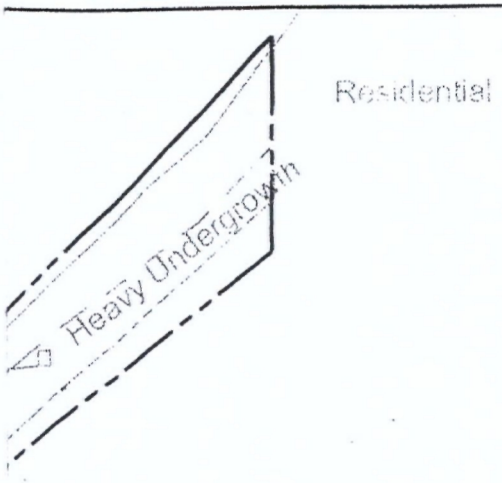
Berthin Q. Hyde, LG, HG
Principal

Attachments:

Figure 1	Site Location Map
Figure 2	Site Map
Figure 3	Soil Screening and Verification Sample Locations with Analytical Data – Berm and Jogging Trail
Figure 4	Soil Screening and Verification Sample Locations with Analytical Data – Former Armory Area
Figure 5	Subsequent Excavation Areas with Compliance Soil Sample Data - Berm and Jogging Trail
Figure 6	Subsequent Excavation Areas with Compliance Soil Sample Data
Table 1	Summary of XRF Field Screening and Verification Soil Sampling
Table 2	Summary of Subsequent Excavation Compliance Soil Samples
Appendix A	Laboratory Analytical Reports
Appendix B	Transportation Manifests and Truck Scale Receipts
Appendix C	Herrerra Environmental Consultants Field Map, XRF Screening, and Soil Sample Results.
Appendix D	XRF Data

CMC/BQH:dmr

SOUND ENVIRONMENTAL STRATEGIES www.soundenvironmental.com	N	Date: September 23, 2005 Drawn By: D. Richardson Chk By: C.M. Carter SES Project No.: 0474-001 File ID: 474-1 fig 1 site location map.doc	Fort Casey 1276 Engle Road Coupeville, Washington	**FIGURE 1** Site Location Map



Legend

Subject Property Boundary

Lot Line

Foot Trail

Bluff

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CAD FILE: 474-C

FIGURE 2
SITE MAP

Sample ID	Depth
SG-10	S

Field Screen lt (ppm)	Verification Sample Result (mg/kg)
1,322	--
--	**664**
--	**4,100**
--	91

Sample ID	Depth
7	

LEGEND

Field Screening 2005)	270 mg/kg	Total Lead Concentration. RED Indicates exceedence of MTCA Method A Cleanup Level.
Sample Location		
		Herrera Consultants XRF field screening and soil sample results. SES Verification soil sample results.
ategies (SES) Location		
	bgs	Below Ground Surface
ation (RETEC ssment 3/3/05)	ppm	Part per million
Area		

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DATE: 11/15/05
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CHK BY: CMC
CAD FILE: 474-00

FIGURE 4
Soil Screening and Verification Sample Locations with Analytical Data - Former Armory Area

LEGEND

(1)	Herrera Consultants XRF Field Location (September 20, 2005)
(CC03SS)	Herrera Consultants Soil Sampl (September 20, 2005)
△ (SES-6)	Sound Environmental Strategies Verification Soil Sample Locatio (November 4, 2005)
▲ (SES-14)	Sound Environmental Strategies Verification Soil Sample Locatio (November 11, 2005)
	Former SES Excavation Area (September and October, 2005)
	Subsequent Excavation Area (November 11, 2005)
270 mg/kg	Total Lead Concentration. RED exceedence of MTCA Method A Level.
	Herrera Consultants XRF field s and soil sample results. SES Ve soil sample results.
bgs	Below Ground Surface
ppm	Part per million
	Edge of Bluff

ple ID	Depth (ft bgs)	XRF Field Screen Result (ppm)	Verification Sample Result (mg/kg)
S-15	Surface	195	--
S-15	0.5	<51	13

Sample ID	Depth	en	Verification Sample Result (mg/kg)
SES-11			xx
SES-11			xx
SES-11			xx
SES-11A			
SES-11B		en	Verification Sample Result (mg/kg)
SES-11C			--
			26

Sample ID	Depth	en	Verification Sample Result (mg/kg)
SES-12			
SES-12			

N

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CAD FILE: 474-001

FIGURE 5
Subsequent Excavation Areas with Compliance Soil Sample Data
- Berm and Jogging Trail

Sample ID	Depth	ield Screen (ppm)	Verification Sample Result (mg/kg)
SES-26		122	XX

Sample ID	Depth	ield Screen (ppm)	Verification Sample Result (mg/kg)
SG-10	Su	49	XX

Sample ID	Depth	ield Screen (ppm)	Verification Sample Result (mg/kg)
SES-21		57.8	26
		93.4	78
		53	32

	XRF Field Screen Result (ppm)	Verification Sample Result (mg/kg)
	<79	39

	ield Screen ppm)	Verification Sample Result (mg/kg)
	--	91

Sample ID	Depth (ft bgs)	XRF Field Screen Result (ppm)	Ve Re
SES-20	Surface	55.6	

	ield Screen ppm)	Verification Sample Result (mg/kg)
	<50	XX

LEGEND

(1)	Herrera Consultants XRF Field Screening Location (September 20, 2005)
(CC03SS)	Herrera Consultants Soil Sample Location (September 20, 2005)
△ (SES-6)	Sound Environmental Strategies (SES) Verification Soil Sample Location (November 4, 2005)
▲ (SES-16)	Sound Environmental Strategies (SES) Verification Soil Sample Location (November 11, 2005)
● SG-10	Surface Soil Sample Location (RETEC Group, Inc. Phase II Assessment 3/3/05)

270 m

bgs

ppm

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DATE: 11/15/05
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CHK BY: CMC
CAD FILE: 474-0C

FIGURE 6
Subsequent Excavation Areas with Compliance Soil Sample Data

APPENDIX B

Transportation Manifests and Truck Scale Receipts

(Will be sent under separate cover)

***FOR 24 HOUR EMERGENCY RESPONSE INFORMATION, CALL (800) 567-7455 ***

702600 12/05/05

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB no. 2050-0039.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: WAH000002693 | Manifest Document No.: 51883

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
FORT CASEY
1276 ENGLE ROAD

4. Generator's Phone COUPEVILLE WA 98239 (206)281-2322

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: BURLINGTON ENVIRONMENTAL, INC.

6. US EPA ID Number: WAR000001743

C. State Transporter's ID

D. Transporter's Phone (253) 863-3044

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
BURLINGTON ENVIRONMENTAL, INC. KENT
20245 77TH AVENUE SOUTH
KENT, WA 98032

10. US EPA ID Number: WAD991281767

G. State Facility's ID

H. Facility's Phone (253) 872-8030

	11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	HAZARDOUS WASTE, SOLID, N.O.S. (CONTAINS LEAD) 9 NA3077 PGIII RQ (D008=10) ERG(171)	RQ	33	DM	13200	P	D008
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
a) 350399-00 - SOIL WITH LEAD - ST6502 (1)

K. Handling Codes for Wastes Listed Above
a)

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; **OR**, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR

Printed/Typed Name | Signature | Month Day Year

TRANSPORTER

17. Transporter 1 Acknowledgment of Receipt of Materials

Printed/Typed Name: MARK F BOWMAN | Signature | Month Day Year: 12 8 05

18. Transporter 2 Acknowledgment of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name | Signature | Month Day Year

EPA Form 8700-22 (Rev. 9-88) Previous editions are obsolete

GENERATOR COPY

TABLES

SOUND ENVIRONMENTAL STRATEGIES
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Table 1
Summary of XRF Field Screening and Verifacation Soil Sampling
Seattle Pacific University
Fort Casey, 1276 Engle Road, Coupeville, Washington

Sample Number	Sample By	Date Sampled	Sample Location	Depth (feet bgs)	XRF Field Screening (ppm)	Total Lead (mg/kg)
1	EPA/Herrera	10/20/05	Jogging trail	Surface	357	--
SES-1	SPU/SES	11/04/05	Jogging trail	Surface	--	94
2	EPA/Herrera	10/20/05	Jogging trail	Surface	887	--
SES-2	SPU/SES	11/04/05	Jogging trail	Surface	--	**440**
SES-2a	SPU/SES	11/04/05	Jogging trail	Surface	--	**390**
3	EPA/Herrera	10/20/05	Berm	3	326	--
SES-3	SPU/SES	11/04/05	Berm	3	--	48
4	EPA/Herrera	10/20/05	Berm	3	574	--
SES-4	SPU/SES	11/04/05	Berm	3	--	**950**
SES-4a	SPU/SES	11/04/05	Berm	3.5	--	**590**
5	EPA/Herrera	10/20/05	Berm	3	10,726	--
CC03SS	EPA/Herrera	10/20/05	Berm	3	--	**16,400**
SES-5	SPU/SES	11/04/05	Berm	3	--	61
SES-5a	SPU/SES	11/04/05	Berm	3	--	2.6
6	EPA/Herrera	10/20/05	Berm	3	2,226	--
SES-6	SPU/SES	11/04/05	Berm	3	--	9.8
SES-6a	SPU/SES	11/04/05	Berm	4	--	21
7	EPA/Herrera	10/20/05	Armory	1	13	--
8	EPA/Herrera	10/20/05	Armory	Surface	1,322	--
CC02SS	EPA/Herrera	10/20/05	Armory	Surface	--	**664**
SES-8	SPU/SES	11/04/05	Armory	Surface	--	**4,100**
SES-8a	SPU/SES	11/04/05	Armory	0.5	--	91
9	EPA/Herrera	10/20/05	Jogging trail	Surface	58	--
10	EPA/Herrera	10/20/05	Jogging trail	Surface	29	--
11	EPA/Herrera	10/20/05	Jogging trail	Surface	14	--
MTCA Method A cleanup levels						250

Chemical analyses conducted by Friedman & Bruya, Inc.

Samples analyzed for total lead by EPA Method 6010.

MTCA = Washington State, Model Toxics Control Act, Method A Cleanup Levels.

-- = not analyzed

Bold font indicates concentration greater than MTCA Method A cleanup level

^{06} = Sample location was subsequently over excavated

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Table 2
Summary of Subsequent Excavation Compliance Soil Samples
Seattle Pacific University
Fort Casey, 1276 Engle Road, Coupeville, Washington

Sample Number	Sample By	Date Sampled	Sample Location	Depth (feet bgs)	XRF Field Screening (ppm)	Total Lead (mg/kg)
SES-8A	SPU/SES	11/04/05	Armory	0.5	--	91
SES-9	SPU/SES	11/11/05	Berm Excavation	3	70	21
SES-10	SPU/SES	11/11/05	Berm Excavation	3.5	70	27
oeSES-11	SPU/SES	11/11/05	South West Berm Excavation	2	8,060	**5,900**
SES-11A	SPU/SES	11/11/05	South West Berm Excavation	3.5	<54	18
SES-11B	SPU/SES	11/15/05	South West Berm Excavation	4	<51	5.11
SES-11C	SPU/SES	11/15/05	South West Berm Excavation	4.5	<52	4.59
SES-12	SPU/SES	11/11/05	2' South of SES-11	2	59	76
SES-13	SPU/SES	11/11/05	2' North of SES-11	3.5	63	26
SES-14	SPU/SES	11/15/05	Jogging Trail, S fence	0.5	<62	26
SES-15	SPU/SES	11/15/05	Jogging Trail, N fence	0.5	<51	13
SES-16	SPU/SES	11/11/05	Armory	0.5	67.8	26
SES-16A	SPU/SES	11/11/05	Armory	1	93.4	78
SES-16B	SPU/SES	11/11/05	Armory	1.5	<53	32
SES-17	SPU/SES	11/11/05	Armory - 6' from footprint NW	Surface	<79	39
SES-18	SPU/SES	11/11/05	Armory - 6' from footprint SW	Surface	<51	10
SES-19	SPU/SES	11/11/05	Armory - 6' from footprint SE	Surface	<41	11
SES-20	SPU/SES	11/11/05	Armory - 6' from footprint NE	Surface	55.6	41
SES-21	SPU/SES	11/11/05	Armory	1	73	180
SES-22	SPU/SES	11/15/05	South East Berm Excavation	3.5	130	160
SES-23	SPU/SES	11/15/05	South West Jogging Trail	0.5	<51	9.59
SES-23A	SPU/SES	11/15/05	South West Jogging Trail	1.5	<46	4.61
SES-23B	SPU/SES	11/15/05	South West Jogging Trail	2	<76	1.78
SES-24	SPU/SES	11/15/05	Armory	1	<49	11.9
SES-25	SPU/SES	11/15/05	Armory	1	122	124
SES-26	SPU/SES	11/15/05	Armory	1	<50	9.73
SES-27	SPU/SES	11/15/05	Armory	1	49	20.4
SES-28	SPU/SES	11/15/05	Armory	1	<50	8.73
SG-10	RETEC	03/03/05	Armory	Surface	--	27
MTCA Method A cleanup levels						250

Chemical analyses conducted by Friedman & Bruya, Inc.
Samples analyzed for total lead by EPA Method 6010.
MTCA = Washington State, Model Toxics Control Act, Method A Cleanup Levels.
-- = not analyzed
Bold font indicates concentration greater than MTCA Method A cleanup level
oe = Sample location was subsequently over excavated

APPENDIX A

Laboratory Analytical Reports

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

November 15, 2005

Chris Carter, Project Manager
Sound Environmental Strategies Corporation
2400 Airport Way S., Suite 200
Seattle, WA 98134-2020

Dear Mr. Carter:

Included are the results from the testing of material submitted on November 11, 2005 from the Camp Casey, F&BI 511133 project. There are 18 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
sou1115r.doc

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	SES-10	Client:	Sound Environmental Strategies
Date Received:	11/11/05	Project:	Camp Casey, F&BI 511133
Date Extracted:	11/14/05	Lab ID:	511133-02
Date Analyzed:	11/14/05	Data File:	511133-02.026
Matrix:	Soil	Instrument:	ICPMS1
Units:	ug/g (ppm)	Operator:	btb

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Bismuth	95	60	125

Analyte:	Concentration ug/g (ppm)
Lead	26.6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	SES-12	Client:	Sound Environmental Strategies
Date Received:	11/11/05	Project:	Camp Casey, F&BI 511133
Date Extracted:	11/14/05	Lab ID:	511133-04
Date Analyzed:	11/14/05	Data File:	511133-04.028
Matrix:	Soil	Instrument:	ICPMS1
Units:	ug/g (ppm)	Operator:	btb

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Bismuth	94	60	125

Analyte:	Concentration ug/g (ppm)
Lead	76.3

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	SES-11A	Client:	Sound Environmental Strategies
Date Received:	11/11/05	Project:	Camp Casey, F&BI 511133
Date Extracted:	11/14/05	Lab ID:	511133-06
Date Analyzed:	11/14/05	Data File:	511133-06.032
Matrix:	Soil	Instrument:	ICPMS1
Units:	ug/g (ppm)	Operator:	btb

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Bismuth	94	60	125

Analyte:	Concentration ug/g (ppm)
Lead	18.4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	SES-15	Client:	Sound Environmental Strategies
Date Received:	11/11/05	Project:	Camp Casey, F&BI 511133
Date Extracted:	11/14/05	Lab ID:	511133-08
Date Analyzed:	11/14/05	Data File:	511133-08.034
Matrix:	Soil	Instrument:	ICPMS1
Units:	ug/g (ppm)	Operator:	btb

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Bismuth	92	60	125

Analyte:	Concentration ug/g (ppm)
Lead	13.1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	SES-16A	Client:	Sound Environmental Strategies
Date Received:	11/11/05	Project:	Camp Casey, F&BI 511133
Date Extracted:	11/14/05	Lab ID:	511133-10
Date Analyzed:	11/14/05	Data File:	511133-10.036
Matrix:	Soil	Instrument:	ICPMS1
Units:	ug/g (ppm)	Operator:	btb

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Bismuth	90	60	125

Analyte:	Concentration ug/g (ppm)
Lead	78.0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

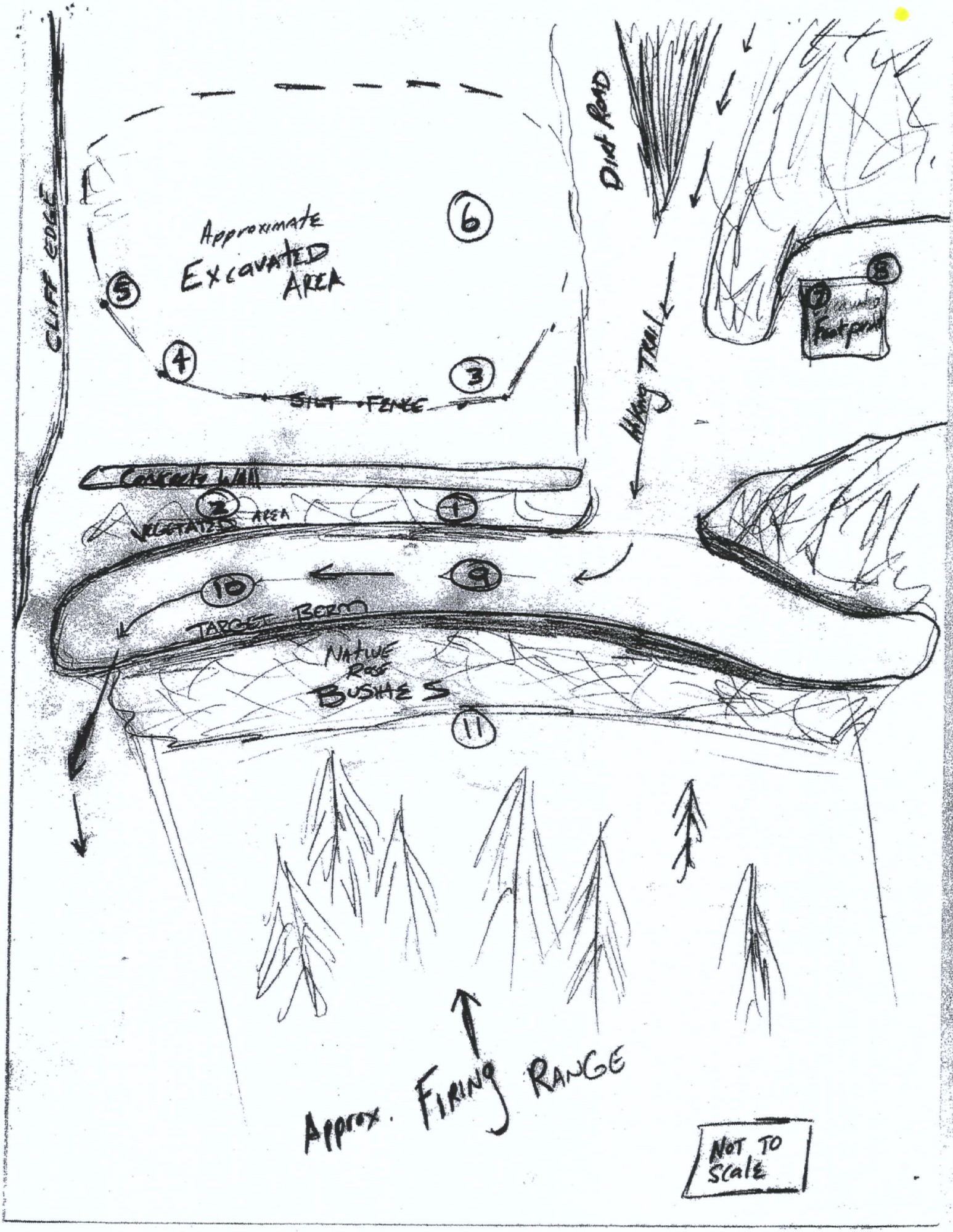
Client ID:	SES-17	Client:	Sound Environmental Strategies
Date Received:	11/11/05	Project:	Camp Casey, F&BI 511133
Date Extracted:	11/14/05	Lab ID:	511133-12
Date Analyzed:	11/14/05	Data File:	511133-12.039
Matrix:	Soil	Instrument:	ICPMS1
Units:	ug/g (ppm)	Operator:	btb

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Bismuth	89	60	125

Analyte:	Concentration ug/g (ppm)
Lead	39.0

APPENDIX C

Herrerra Environmental Consultants
Field Map, XRF Screening, and Soil Sample Results.


CLIFF EDGE
Approximate
EXCAVATED
AREA
6
5
4
3
SILT FENCE
DIRT ROAD
HIKING TRAIL
Footprint
CONCRETE WALL
2
1
ELEVATED AREA
10
9
TARGET BERM
NATIVE
ROSE
BUSHES
11
APPROX. FIRING RANGE
NOT TO
SCALE

Note: XRF Locations correspond to hand-drawn figure

APPENDIX D

XRF Data

Serial #XL309-U2784NR6863 Site: Date: 11/11/2005 to 11/15/2005

No	XLNo	Cor1		Ssec	Date/Time	Cycle	Res6 ± Prec	Pb ± Prec	Res3 ± Pr
1	1	Shutter Cal	1	26.6	11/11/2005 12:48:49	1 of 1	564.40 ± 0.00	NA	NA
2	10			48.1	11/11/2005 13:01:03	1 of 1	NA	<LOD = 48.00	NA
3	11			43.6	11/11/2005 13:02:09	1 of 1	NA	<LOD = 51.30	NA
4	12			58.1	11/11/2005 13:09:41	1 of 1	NA	390.60 ± 42.20	NA
5	13			21.8	11/11/2005 13:16:41	1 of 1	NA	<LOD = 78.75	NA
6	14			52.6	11/11/2005 13:21:45	1 of 1	NA	55.60 ± 35.40	NA
7	15			81.3	11/11/2005 13:27:24	1 of 1	NA	<LOD = 41.25	NA
8	16			46.0	11/11/2005 13:37:36	1 of 1	NA	<LOD = 58.95	NA
9	17			15.3	11/11/2005 13:41:22	1 of 1	NA	169.40 ± 79.80	NA
10	18			92.2	11/11/2005 13:45:03	1 of 1	NA	164.30 ± 33.00	NA
11	19			74.7	11/11/2005 13:50:01	1 of 1	NA	<LOD = 43.35	NA
12	2			3.9	11/11/2005 12:56:31	1 of 1	NA	<LOD = 62.10	NA
13	20			25.2	11/11/2005 13:54:43	1 of 1	NA	8057.60 ± 420.00	NA
14	21			62.9	11/11/2005 14:05:27	1 of 1	NA	648.00 ± 55.60	NA
15	22			63.7	11/11/2005 14:11:13	1 of 1	NA	565.60 ± 58.30	NA
16	23			61.5	11/11/2005 14:16:29	1 of 1	NA	63.50 ± 36.40	NA
17	24			65.5	11/11/2005 14:22:12	1 of 1	NA	<LOD = 53.85	NA
18	25			63.0	11/11/2005 14:32:57	1 of 1	NA	221.80 ± 41.00	NA
19	26			63.8	11/11/2005 14:38:46	1 of 1	NA	195.00 ± 42.40	NA
20	27			17.7	11/11/2005 14:53:53	1 of 1	NA	<LOD = 91.20	NA
21	28			61.4	11/11/2005 14:54:58	1 of 1	NA	<LOD = 61.80	NA
22	29			54.8	11/11/2005 15:00:30	1 of 1	NA	<LOD = 51.00	NA
23	3	Shutter Cal	1	26.6	11/11/2005 12:26:43	1 of 1	566.40 ± 0.00	NA	NA
24	30			61.3	11/11/2005 15:15:02	1 of 1	NA	210.00 ± 42.20	NA
25	31			48.5	11/11/2005 15:22:54	1 of 1	NA	63.00 ± 40.80	NA
26	32			61.3	11/11/2005 15:25:21	1 of 1	NA	578.00 ± 59.00	NA
27	33			15.3	11/11/2005 15:37:13	1 of 1	NA	622.00 ± 120.00	NA
28	34			61.5	11/11/2005 15:38:12	1 of 1	NA	378.60 ± 52.30	NA
29	35			61.5	11/11/2005 15:50:58	1 of 1	NA	<LOD = 51.75	NA
30	36			45.8	11/11/2005 15:58:07	1 of 1	NA	580.00 ± 65.90	NA
31	37			42.3	11/11/2005 16:04:04	1 of 1	NA	<LOD = 64.95	NA
32	38			2.2	11/11/2005 16:05:04	1 of 1	NA	<LOD = 255.00	NA
33	39			60.9	11/11/2005 16:05:32	1 of 1	NA	<LOD = 69.90	NA
34	4			41.3	11/11/2005 12:30:09	1 of 1	NA	67.80 ± 42.00	NA
35	40			8.8	11/11/2005 16:09:48	1 of 1	NA	<LOD = 132.90	NA
36	41			47.1	11/11/2005 16:10:24	1 of 1	NA	133.80 ± 53.90	NA
37	42			6.2	11/11/2005 16:18:41	1 of 1	NA	312.00 ± 160.00	NA
38	43			34.9	11/11/2005 16:19:05	1 of 1	NA	257.00 ± 55.00	NA
39	44			61.4	11/11/2005 16:27:42	1 of 1	NA	76.60 ± 36.90	NA
40	45	Shutter Cal	1	26.6	11/15/2005 11:02:51	1 of 1	570.40 ± 0.00	NA	NA
41	46			2.2	11/15/2005 11:06:36	1 of 1	NA	<LOD = 240.00	NA
42	47			61.5	11/15/2005 11:06:50	1 of 1	NA	121.70 ± 36.40	NA
43	48			61.3	11/15/2005 11:10:16	1 of 1	NA	224.40 ± 41.70	NA
44	49			61.7	11/15/2005 11:15:42	1 of 1	NA	<LOD = 49.35	NA
45	5			33.0	11/11/2005 12:35:28	1 of 1	NA	93.40 ± 55.20	NA
46	50			61.3	11/15/2005 11:19:08	1 of 1	NA	167.90 ± 40.10	NA
47	51			24.0	11/15/2005 11:22:19	1 of 1	NA	399.80 ± 76.60	NA
48	52			63.2	11/15/2005 11:25:22	1 of 1	NA	171.90 ± 39.20	NA
49	53			2.2	11/15/2005 11:31:00	1 of 1	NA	<LOD = 240.00	NA
50	54			61.4	11/15/2005 11:31:13	1 of 1	NA	49.50 ± 32.80	NA

No	XLNo	Cor1		Ssec	Date/Time	Cycle	Res6 ± Prec	Pb ± Prec	Res3 ± Pr
51	55			61.7	11/15/2005 11:35:02	1 of 1	NA	<LOD = 50.10	NA
52	56			61.6	11/15/2005 11:41:33	1 of 1	NA	<LOD = 51.00	NA
53	57			61.6	11/15/2005 11:48:56	1 of 1	NA	<LOD = 50.40	NA
54	58			61.5	11/15/2005 11:52:24	1 of 1	NA	<LOD = 46.35	NA
55	59			6.7	11/15/2005 11:56:54	1 of 1	NA	<LOD = 150.00	NA
56	6			56.4	11/11/2005 12:42:18	1 of 1	NA	<LOD = 52.50	NA
57	60			23.8	11/15/2005 11:57:25	1 of 1	NA	<LOD = 75.75	NA
58	61			21.8	11/15/2005 12:03:29	1 of 1	NA	840.00 ± 110.00	NA
59	62			61.6	11/15/2005 12:06:54	1 of 1	NA	<LOD = 51.45	NA
60	63			62.0	11/15/2005 12:10:41	1 of 1	NA	<LOD = 51.75	NA
61	64			61.5	11/15/2005 12:14:19	1 of 1	NA	129.90 ± 37.20	NA
62	65	Shutter Cal	1	31.3	11/15/2005 20:15:58	1 of 1	NA	NA	546.80 ± 0.0
63	7			23.5	11/11/2005 12:47:53	1 of 1	NA	328.00 ± 60.30	NA
64	8			108.9	11/11/2005 12:51:44	1 of 1	NA	357.60 ± 33.90	NA
65	9			41.3	11/11/2005 12:59:52	1 of 1	NA	<LOD = 50.85	NA

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	SES-19	Client:	Sound Environmental Strategies
Date Received:	11/11/05	Project:	Camp Casey, F&BI 511133
Date Extracted:	11/14/05	Lab ID:	511133-14
Date Analyzed:	11/14/05	Data File:	511133-14.041
Matrix:	Soil	Instrument:	ICPMS1
Units:	ug/g (ppm)	Operator:	btb

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Bismuth	93	60	125

Analyte:	Concentration ug/g (ppm)
Lead	11.3

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	SES-21	Client:	Sound Environmental Strategies
Date Received:	11/11/05	Project:	Camp Casey, F&BI 511133
Date Extracted:	11/14/05	Lab ID:	511133-16
Date Analyzed:	11/14/05	Data File:	511133-16.043
Matrix:	Soil	Instrument:	ICPMS1
Units:	ug/g (ppm)	Operator:	btb

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Bismuth	91	60	125

Analyte:	Concentration ug/g (ppm)
Lead	181

Analysis For Total Metals By EPA Method 200.8

Client ID:	SES-22	Client:	Sound Environmental Strategies
Date Received:	11/15/05	Project:	Camp Casey, F&BI 511151
Date Extracted:	11/15/05	Lab ID:	511151-01
Date Analyzed:	11/15/05	Data File:	511151-01.018
Matrix:	Soil	Instrument:	ICPMS1
Units:	ug/g (ppm)	Operator:	bth

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Bismuth	93	60	125

Analyte:	Concentration ug/g (ppm)
Lead	160

Analysis For Total Metals By EPA Method 200.8

Client ID:	SES-11B	Client:	Sound Environmental Strategies
Date Received:	11/15/05	Project:	Camp Casey, F&BI 511151
Date Extracted:	11/15/05	Lab ID:	511151-02
Date Analyzed:	11/15/05	Data File:	511151-02.019
Matrix:	Soil	Instrument:	ICPMS1
Units:	ug/g (ppm)	Operator:	bth

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Bismuth	91	60	125

Analyte:	Concentration ug/g (ppm)
Lead	5.11

Analysis For Total Metals By EPA Method 200.8

Client ID:	SES-11C	Client:	Sound Environmental Strategies
Date Received:	11/15/05	Project:	Camp Casey, F&BI 511151
Date Extracted:	11/15/05	Lab ID:	511151-03
Date Analyzed:	11/15/05	Data File:	511151-03.020
Matrix:	Soil	Instrument:	ICPMS1
Units:	ug/g (ppm)	Operator:	btb

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Bismuth	90	60	125

Analyte:	Concentration ug/g (ppm)
Lead	4.59

Analysis For Total Metals By EPA Method 200.8

Client ID:	SES-23	Client:	Sound Environmental Strategies
Date Received:	11/15/05	Project:	Camp Casey, F&B1 511151
Date Extracted:	11/15/05	Lab ID:	511151-04
Date Analyzed:	11/15/05	Data File:	511151-04.021
Matrix:	Soil	Instrument:	ICPMS1
Units:	ug/g (ppm)	Operator:	btb

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Bismuth	91	60	125

Analyte:	Concentration ug/g (ppm)
Lead	9.59

Analysis For Total Metals By EPA Method 200.8

Client ID:	SES-23A	Client:	Sound Environmental Strategies
Date Received:	11/15/05	Project:	Camp Casey, F&BI 511151
Date Extracted:	11/15/05	Lab ID:	511151-05
Date Analyzed:	11/15/05	Data File:	511151-05.022
Matrix:	Soil	Instrument:	ICPMS1
Units:	ug/g (ppm)	Operator:	btb

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Bismuth	90	60	125

Analyte:	Concentration ug/g (ppm)
Lead	4.61

Analysis For Total Metals By EPA Method 200.8

Client ID:	SES-23B	Client:	Sound Environmental Strategies
Date Received:	11/15/05	Project:	Camp Casey, F&BI 511151
Date Extracted:	11/15/05	Lab ID:	511151-06
Date Analyzed:	11/15/05	Data File:	511151-06.023
Matrix:	Soil	Instrument:	ICPMS1
Units:	ug/g (ppm)	Operator:	btb

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Bismuth	90	60	125

Analyte:	Concentration ug/g (ppm)
Lead	1.78

Analysis For Total Metals By EPA Method 200.8

Client ID:	SES-24	Client:	Sound Environmental Strategies
Date Received:	11/15/05	Project:	Camp Casey, F&BI 511151
Date Extracted:	11/15/05	Lab ID:	511151-07
Date Analyzed:	11/15/05	Data File:	511151-07.024
Matrix:	Soil	Instrument:	ICPMS1
Units:	ug/g (ppm)	Operator:	bth

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Bismuth	89	60	125

Analyte:	Concentration ug/g (ppm)
Lead	11.9

Analysis For Total Metals By EPA Method 200.8

Client ID:	SES-25	Client:	Sound Environmental Strategies
Date Received:	11/15/05	Project:	Camp Casey, F&B# 511151
Date Extracted	11/15/05	Lab ID:	511151-08
Date Analyzed:	11/15/05	Data File:	511151 08.025
Matrix:	Soil	Instrument:	ICPMS1
Units:	ug/g (ppm)	Operator:	bth

Internal Standard	% Recovery:	Lower Limit:	Upper Limit:
Bismuth	88	60	125

Analyte:	Concentration ug/g (ppm)
Lead	124

Analysis For Total Metals By EPA Method 200.8

Client ID:	SES-26	Client:	Sound Environmental Strategies
Date Received:	11/15/05	Project:	Camp Casey, F&BI 511151
Date Extracted:	11/15/05	Lab ID:	511151-09
Date Analyzed:	11/15/05	Data File:	511151-09.026
Matrix:	Soil	Instrument:	ICPMS1
Units:	ug/g (ppm)	Operator:	btb

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Bismuth	84	60	125

Analyte:	Concentration ug/g (ppm)
Lead	9.74

Analysis For Total Metals By EPA Method 200.8

Client ID:	SES-27	Client:	Sound Environmental Strategies
Date Received:	11/15/05	Project:	Camp Casey, F&B1 511151
Date Extracted:	11/15/05	Lab ID:	511151-10
Date Analyzed:	11/15/05	Data File:	511151-10.027
Matrix:	Soil	Instrument:	ICPMS1
Units:	ug/g (ppm)	Operator:	hth

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Bismuth	84	60	125

Analyte:	Concentration ug/g (ppm)
Lead	20.4

Analysis For Total Metals By EPA Method 200.8

Client ID:	SES-28	Client:	Sound Environmental Strategies
Date Received:	11/15/05	Project:	Camp Casey, F&B1 511151
Date Extracted:	11/15/05	Lab ID:	511151-11
Date Analyzed:	11/15/05	Data File:	511151-11.029
Matrix:	Soil	Instrument:	ICPMS1
Units:	ug/g (ppm)	Operator:	btb

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Bismuth	84	60	125

Analyte:	Concentration ug/g (ppm)
Lead	8.73

Date of Report: 11/16/05
Date Received: 11/15/05
Project: Camp Casey, F&BI 511151

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR METALS BY EPA METHOD 200.8

Laboratory Code: 511134-06 (Duplicate)

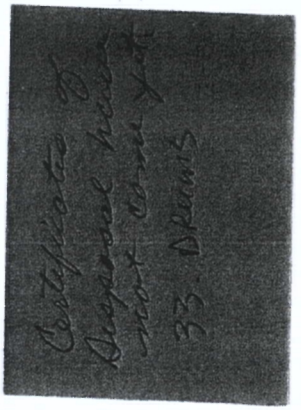
Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Lead	ug/g (ppm)	3.01	3.02	0	0-20

Laboratory Code: 511134-06 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	Acceptance Criteria
Lead	ug/g (ppm)	20	3.01	76.4	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	Acceptance Criteria
Lead	ug/g (ppm)	20	88.8	70-130



APPENDIX E

CERTIFICATE OF DISPOSAL